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In re Patent Application of  
BERTRAND ET AL.

Serial No. 10/813,564

Filed: MARCH 30, 2004

REMARKS

Applicants thank the Examiner for the careful and thorough examination of the present application, and for extending all courtesies during telephonic conversations conducted on December 29, 2006 and January 3, 2007.

Applicants have amended independent Claims 12, 23, and 33 and dependent Claims 16 and 26 to more clearly recite the claimed invention.

Applicants submit that no new matter or new issues have been introduced. Based on the arguments and amendments presented, all claims are believed to be patentable.

I. The Claimed Invention

Amended independent Claim 12 is directed to a comparator with two thresholds comprising a two-threshold latch including an input and an output respectively forming an input and an output of the comparator, and including a first node between a first power supply terminal and the output of the comparator. The comparator further includes a first negative feedback loop acting on the first node for setting a first threshold of the comparator as a function of a first power supply potential applied to the first power supply terminal, and as a function of a first reference potential.

Independent Claim 12 has been amended to recite the first threshold is a voltage rise triggering threshold, and the first reference potential is less than or equal to the first power supply potential, which is positive. Support for this

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amendment may be found in paragraphs 2-11 of the present application. The difference between the first power supply potential and the first reference potential is positive and increases as a function of the first power supply potential to limit an increase in the first threshold when the first power supply potential increases.

Amended independent Claim 23 is directed to a comparator similar to independent Claim 12 and further recites a latch connected between first and second power supply terminals and having a voltage rise triggering threshold and a voltage drop triggering threshold, a second node between the second power supply terminal and the output of the comparator, and a second negative feedback loop for setting a second threshold of the comparator as a function of a second power supply potential applied to the second power supply terminal, and as a function of a second reference potential applied to said second negative feedback loop. Independent Claim 33 is directed to a method counterpart of independent Claim 23.

## II. Claims 12-13, 16-23, 26-33 And 36-42 Are Patentable

Independent Claims 12, 23, and 33 were rejected by the Examiner over U.S. Patent No. 6,127,898 to Naura. In the Office Action, the Examiner cited the  $V_{ref1}$  potential of the Naura patent as teaching the first reference potential ( $V_{REF1}$ ) potential of the present application. (Col. 5, lines 34-36). The Naura patent discloses a threshold amplifier where the transistors that set voltage rise threshold and voltage drop

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threshold in the amplifier are controlled by a bias control circuit. (Col. 4, lines 23-27). Figure 1 of the Naura patent is reproduced below.

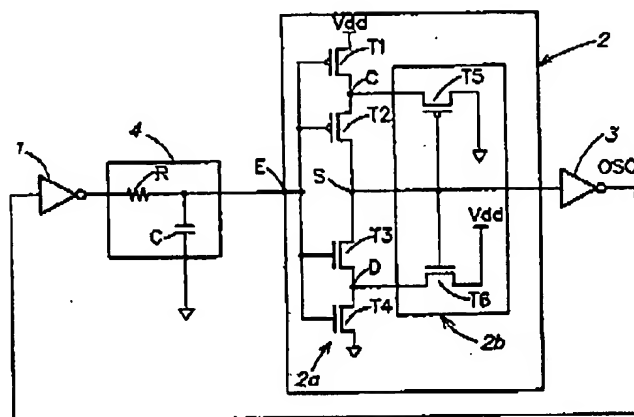
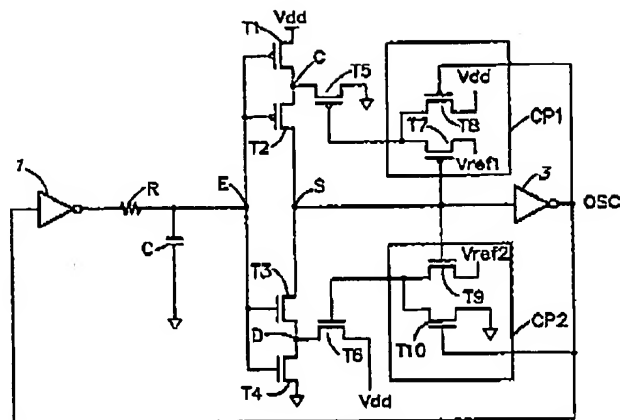


Figure 1 of the Naura patent

Figure 1 of the Naura patent discloses threshold amplifier 2 with inverter stage 2a and a stage 2b for setting the voltage rise threshold and the voltage drop threshold. (Col. 3, lines 15-17). Further, the Naura patent further discloses that the transistors T6 and T5 set the voltage rise threshold and voltage drop threshold, respectively. (Col.3, lines 39-42 and 55-57). The Naura patent incorporates the characteristics of Figure 1 into Figure 3. (Col. 4, lines 1-4). Figure 3 of the Naura patent is reproduced below.

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**Figure 3 of the Naura Patent**

The Naura patent discloses that the first bias control circuit **CP1** and the second bias control circuit **CP2** are associated with transistors **T5** and **T6**, respectively. (Col. 4, lines 22-27). In Figure 3 of the Naura patent, the voltage potential **Vref2** is introduced into second bias control circuit **CP2**; the same circuit that is associated with transistor **T6**, which modifies the voltage rise threshold. Further, the Naura patent discloses that **Vref2**, the voltage that modifies the voltage rise threshold, is equal to **Vdd** minus a constant. (Col. 5, lines 38-42).

Independent Claims 12, 23, and 33 recite a first threshold of the comparator as a function of a first power supply potential (**VDD**) applied to the first power supply terminal and as a function of a first reference potential (**VREF1**), wherein the first threshold is a voltage rise triggering threshold.

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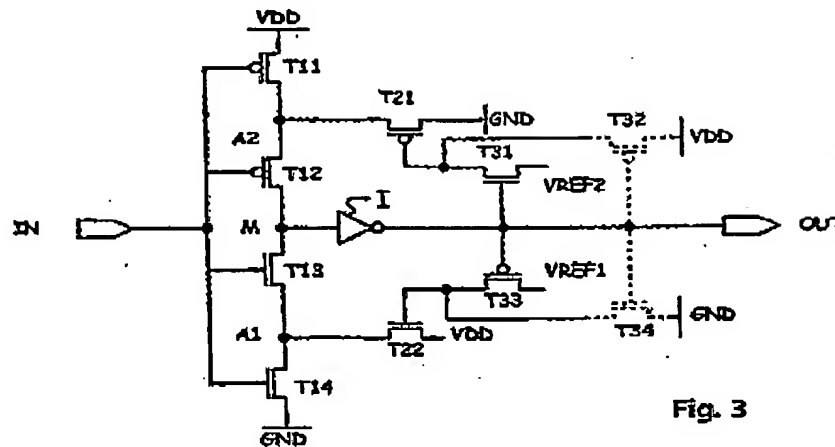


Fig. 3

Figure 3 of the Present Application

Figure 3, reproduced above, and paragraphs 32-34 of the specification of the present application provide the support for the contention that **VREF1** controls transistor T22 and the modification of the voltage rise triggering threshold (VH). Therefore, the first reference potential (**VREF1**) correlates with **Vref2** of the Naura patent.

Further, independent Claims 12, 23, and 33 recite the first reference potential (**VREF1**) is less than or equal to the first power supply potential (**VDD**), which is positive, and wherein a difference between the first power supply potential (**VDD**) and the first reference potential (**VREF1**) is positive and increases as a function of the first power supply potential (**VDD**) to limit an increase in the first threshold when the first power supply potential increases (**VDD**). On the contrary, the Naura patent discloses that "Vref2 is independent of the method and

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equal to Vdd minus a constant." (Col. 5, lines 39-40). The Naura patent further discloses that the difference between the voltage rise and voltage drop thresholds diminishes when Vdd diminishes. (Col. 4, 21-22). The Naura patent simply does not teach the above highlighted recitation of the independent claims. In stark contrast, the stated goal of the Naura patent is to change the voltage rise and voltage drop threshold values as Vdd decreases. (Col. 2, lines 18-23). Therefore, the Vref2 of the Naura patent does not disclose the claimed characteristics of VREF1 in the present application.

Accordingly, independent Claims 12, 23, and 33 are patentable over the Naura patent for its above highlighted deficiencies. Their respective dependent claims, which recite yet further distinguishing features, are also patentable, and require no further discussion herein.

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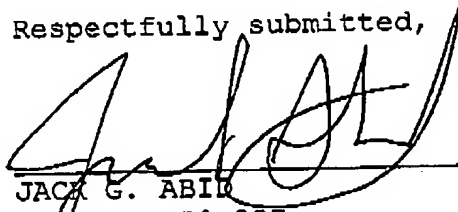
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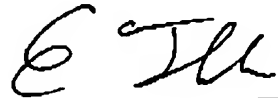
CONCLUSIONS

In view of the arguments and amendments presented above, it is submitted that all of the claims are patentable. Accordingly, a Notice of Allowance is respectfully requested in due course. Should any minor informalities need to be addressed, the Examiner is encouraged to contact the undersigned at the telephone number listed below.

Respectfully submitted,

  
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I HEREBY CERTIFY that the foregoing correspondence has been forwarded via facsimile number 571-273-8300 to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 this 3 day of January, 2007.

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